

Abstract

A process for the preparation of α -substituted carboxylic acids from the series including α -hydroxycarboxylic acids and N-substituted- α -aminocarboxylic acids by cathodic carboxylation with carbon dioxide of a compound corresponding to the general formula $R^1-C(=X)R^2$ which is constituted by aldehydes, ketones or N-substituted imines. In the past, that carboxylation has taken place in an undivided electrolytic cell with the use of a sacrificial anode. As described herein, the carboxylation takes place in the absence of a sacrificial anode in an electrolytic cell divided by a separator, at a diamond film cathode. The anode is formed of a material which is stable under electrolytic conditions; in particular, it is a diamond film electrode. The catholyte includes an organic solvent and a conducting salt.